Texas Commission on Environmental Quality
Investigation Report
EMCHEM CORPORATION
CN600346662

EMCHEM

RN100636042

Investigation # 26845 **Incident #**

Investigator: CASIMIR ONWUKA

Site Classification
IHW LANDFILL
INDUSTRIAL NONHAZARDOUS CLASS
CONTAINER STORAGE AREA
TANK
GENERATOR
DISPOSAL
STORAGE

Conducted: 02/12/2003 -- 02/26/2003

SIC Code: 9999

Program(s): INDUSTRIAL AND HAZARDOUS WASTE

Investigation Type : Site Assessment

Location : 4308 Rice Dryer Rd, Pearland, TX

Additional ID(s) :

Address: 4308 RICE DRIER RD; PEARLAND, TX 77581

Activity Type :

Principal(s) :

Role	Name
RESPONDENT	EMCHEM CORPORATION

Contact(s) :

Role	Title	Name	Phone	
Regulated Entity Contact	OWNER/PRESIDENT	DR MILLER EMORY PHD		
Participated in Investigation	CONSULTANT	MR WAYNE J CROUCH	Fax	(281) 481-8164
			Work	(281) 481-5262
Participated in Investigation	OWNER/PRESIDENT	DR MILLER EMORY PHD	Work	(713) 436-9899

Other Staff Member(s) :

Role	Name
QA Reviewer	LORI HAYNIE
Supervisor	RAMA YADAV

Associated Check List

Checklist Name	Unit Name
IHW INVESTIGATION TYPES	26845.ACT
IHW PRE-INVESTIGATION	26845.PRE
IHW GENERIC OTHER VIOLATIONS	26845.Gen

9865662

Investigation Comments :

INTRODUCTION

On February 12, 13 and 26, 2003, the TCEQ Houston Region Office conducted a Case Development Investigation (CDI) on EmChem Corporation (EmChem). The CDI included review of the Houston Region Office records and evaluation of analytical data of soil and groundwater samples obtained during sampling events conducted in August and October 2002. This report provides a brief history of EmChem and the results of the soil and groundwater sample analyses.

GENERAL FACILITY

EmChem Corporation is owned and operated by Dr. Emery Miller. Operations at the site began in the mid 1960s as SunChem for the production of paint pigment and solvents. EmChem is located at 4308 Rice Dryer Road, Pearland, Texas, and began operation as a glycol reclamation facility in 1969. A facility location map is provided with this report as Attachment 2. Glycol reclamation is accomplished by vacuum distillation of mixtures of triethylene glycol (TEG) and polyethylene glycol (PEG) received from various industrial sources that included Diamond Shamrock and Celanese (Hoechst). Last distillation at the facility was conducted in 1990. Distilled TEG and PEG were sold to natural gas companies either directly or through chemical brokers. The facility is currently not operational. It has not been operational for more than twelve years. Operations were stopped because of an injunction placed on the facility by the state Office of the Attorney General (OAG).

EmChem's notice of registration (NOR) (Attachment 6) indicates it is a nonhazardous waste generator, and was last updated on July 15, 2002. The NOR indicates it generates three (3) Class 2 nonhazardous waste streams (WS): NOR WS #00019992, 00039022, and 00062192. The waste streams consist of general office waste, plant production waste, and bottoms from distillation of tri/tetra ethylene glycol. The NOR also indicates it has five active nonhazardous waste management units (WMUs), two inactive landfills and one inactive container storage area. The active WMUs include one container storage area and four tanks. One tank (NOR WMU # 004) is used to store high molecular weight polymer, while the remaining three tanks are used to store PEG bottoms. It was noted that the polymer waste stream is also listed as inactive WS #00054032.

SOIL AND GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES

On August 21, 22, 30 and October 1, 2002, the TCEQ Houston Region Office participated in sampling activities conducted at EmChem Corporation (EmChem). The TCEQ role in the sampling activities included observation and co-sampling of soil and groundwater. The agency participation was requested by Mr. Albert Bronson, Assistant Attorney General, of the Office of the Attorney General (OAG) in Austin, Texas, who is prosecuting EmChem for violations of TCEQ rules and regulations. The initial notice (Attachment 1) for the site sampling was issued by the Law Office of Jep Hill (LOJH) representing Dr. Miller and EmChem Corporation on August 7, 2002, and was received by the TCEQ Houston Region Office on August 9, 2002. It notified the TCEQ of an August 21, 2002, scheduled site sampling at EmChem. The sampling was conducted on behalf of Dr. Miller and EmChem by Mr. Wayne J. Crouch of Wayne J. Crouch Environmental Services, Inc. Ms. Nicole Bealle, Team Leader, Waste Section, Houston Region Office, was present for the August 21, 2002, sampling event. However, no sampling was conducted for the day because the initial equipment was not suitable for the ground conditions and later equipment breakdown. Sampling was later conducted on August 22, 30, and October 1, 2002. Mr. Onwuka was present for each of the days mentioned. Dr. Miller also was present throughout the site sampling. The soil sampling was conducted on August 22 , 2002, while the groundwater sampling was conducted on August 30 and October 1, 2002. A review of the analytical results was conducted on November 19 and 20, 2002. Preliminary evaluation of the analytical results were forwarded to the OAG on November 20, 2002, and final evaluation of analytical data conducted on February 26, 2003, for this report.

Drilling and Sampling Procedures:

Sampling collection and analysis followed procedures specified in a site investigation work plan developed for EmChem dated March 1998 and updated with information in OAG's letter dated June 17, 1999, and accepted by LOJP in a letter dated January 18, 2000. Borings were drilled by Petro Installation & Environmental, Houston, Texas, under contract to Wayne J. Crouch Environmental Services, Inc. Mr. Daniel Morales, a driller with Petro Installation & Environment operated the equipment. The drilling was conducted with a Geoprobe System, model 54LT. The Geoprobe equipment is a direct push system forcollecting continuous core samples of unconsolidated materials.

Each boring was advanced to approximately four feet depth below ground surface (BGS). Continuous soil samples were collected in four- foot sample liners with open diameter of 1.375 inch. The core recovery for each boring was estimated to 100 percent. There were no preservative or field screening of the samples. The liner were sealed and depth for samples to be analyzed marked on the liner. For each sample liner, three areas were marked, representing approximately the top 6 inch BGS, middle 1.5 feet BGS and bottom 3.5 feet BGS of soil, for sample extractions. Therefore samples 1, 2 and 3 represent samples from location A with increasing depth. Three locations were chosen for co-sampling. As shown on the sample location map, the soil samples were from former solid waste management unit (SWMU) number 1, former drum storage area, and SWMU 3, former Naphtha Residue (NPR) landfill. The sample locations are indicated in a site location map presented in Attachment 2.

Four boreholes were drilled for groundwater sampling. Each boring, according to Mr. Crouch, was advanced to the depth of the first saturated zone encountered. This corresponds to the water table. Mr. Onwuka did not observe the drilling of the these boreholes. A request was made to Mr. Crouch for the water boring logs. He cited legal issues as his reason not to release the information. This information was communicated to Mr. Bronson. A sampling location map is presented in Attachment 2. No field screening and/or physical measurements were taken of the groundwater during the sampling events. The TCEQ co-sampled at three boreholes, GW- NE, GW-NW, and GW-SE. The TCEQ samples were pumped with a peristaltic pump and collected in laboratory provided method-specified containers with appropriate preservatives and retained in ice. Because of low recharge, the groundwater sampling was conducted in two days, August 30, and October 1, 2002; and one sample bottle was filled out of three sample bottles proposed at sample location GW-NE. All the samples were submitted to the laboratory within eight hours from the time they were collected.

Analytical Results

All soil and groundwater analyses were performed in accordance with EPA SW-846 protocol by Accutest, in Houston, Texas. Soil sample numbers 1 through 3 ("A" location) were analyzed for RCRA metals and Polychlorinated Biphenyls (PCB); sample numbers 4 to 6 ("B" location) were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and RCRA metals; and sample numbers 7 to 9 ("C" location) were analyzed for Polynuclear Aromatic Hydrocarbons (PAH). The water samples were analyzed for RCRA metals, VOCs and SVOCs. Laboratory reports for the soil and groundwater analyses are presented in Attachment 3 and 4, respectively. Analytical results of the soil samples were received on October 7, 2002, while the results of the groundwater samples were received on September 25 and October 30, 2002. Sample numbers 7 to 9 are soil samples collected from the former SWMU number 3, NPR landfill. These samples were analyzed for PAH. Tabulations of the RCRA metal analyses for soil samples number 1 through 6 and groundwater samples number 1 to 3 are presented in Table 1 and 2 below. For Table 2, the groundwater sample collected on October 1, 2002, is considered as sample number 3. Table 1 shows that surface soil samples from locations A and B or sample numbers 1 and 4, respectively, have lead and mercury concentrations exceeding the Texas-Specific Background concentrations for lead (15 mg/kg) and mercury (0.10 mg/kg). The groundwater samples detected arsenic, barium, chromium, lead and mercury at concentrations less than US EPA interim primary drinking water standards as specified in 40 Code of Federal Registrations 265 Appendix III.

The PAH analyses indicated the concentrations of Acenaphthylene, Fluoranthene, Naphthalene, Phenanthrene and Pyrene above laboratory reporting limits. However, the concentrations are less than Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Protective Concentration Level (PCL) for residential and commercial/industrial properties.

Copies of the results with chain of custody, and quality assurance and quality control documentation, and sample location map were sent to Mr. Bronson on November 20, 2002.

Table 1, Analytical Results for RCRA Metals - Soil (mg/kg)

Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
1	<1.2	90.3	<0.59	12.4	55.5*	0.10*	<0.59	<1.2
2	<1.3	148	<0.65	18.4	9.7	<0.084	<0.65	<1.3
3	<1.3	163	<0.65	18.5	9.5	<0.077	<0.65	<1.3
4	<1.3	78.7	<0.63	15.4	34.6*	0.10*	<0.63	<1.3
5	<1.3	138	<0.65	21.0	12.8	<0.080	<0.65	<1.3
6	<1.3	262	<0.63	19.0	12.8	<0.082	<0.63	<1.3

* Concentration of COC exceeded Texas-Specific Background

Table 2, Analytical Results for RCRA Metals - Groundwater ((microng/l)

Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
1	<10	71	<4.0	<10	<10	<0.20	<10	<6.0
2	24.1	389	<4.0	90.7	31.1	0.40	<10	<6.0
3	16.3	252	<4.0	70.3	15.9	0.21	<10	<6.0

BACKGROUND/COMPLIANCE HISTORY

TCEQ records indicate that EmChem has had a history of numerous complaints, spills, nonpermitted discharges and unauthorized solid waste disposal practices dating from 1970. The records also indicate that correspondence outlining preventive measures to be taken at the plant did not result in concrete actions being taken. It was also noted that local city and county agencies have had similar experiences of complaints and noncommital of EmChem in resolving issues and concerns. Recently a complaint and two CDIs were conducted at the facility in 1999 and 2000. The investigations did not involve sampling. Internal memorandums developed from the CDIs documented the background and status of equipment on the site. The operational status and conditions of EmChem have not changed since the investigations, and copies of the IOMs from the CDIs are attached to this report as Attachment 5.

CONCLUSION

Analytical results of the soil and groundwater samples confirmed chemical releases at the site. An environmental risk and health hazard assessment of the site should be conducted in accordance with the provision of 30 Texas Administrative Code 350, Texas Risk Reduction Program.

OUTSTANDING ALLEGED VIOLATIONS

During the investigation the following alleged violations were noted and remain unresolved.

1. 30 Texas Administrative Code (TAC) 335.6 (c) - Notification requirements (Category C3)

   EmChem needs to update its NOR. A review of EmChem's NOR indicated that

WS#00054032 is as an inactive WS. However, the WS is listed as being currently managed in one of the facility's waste storage tanks, WMU #004.

2. 30 TAC 335.4 and 30 TAC 26.121 - Unauthorized Discharge (Category B10)

Analytical results of the soil samples indicated concentrations of Barium, Chromium, Lead and Mercury above laboratory reporting limits. Two of the soil samples have Lead and Mercury concentrations that exceeded the Texas-Specific Background concentrations for Lead (15.0 mg/kg) and Mercury (0.10 mg/kg). Analytical results in some of the groundwater samples indicated that Barium, Chromium and Mercury concentration above laboratory reporting levels. EmChem should conduct an environmental risk and health hazard assessment of the site in accordance with the provisions of 30 Texas Administrative Code 350, Texas Risk Reduction Program.

The findings of the investigation are not forwarded to Mr. Miller or his representatives. However, copies of the report are being forward to the TCEQ Enforcement and Litigation divisions, and the state's Office of the Attorney General.

The above citations contain the complete rule references and descriptions of violations. The citations which are automatically generated by the database systems and found in the next section titled "Summary of Outstanding Alleged Violations" are not complete and should be disregarded at this time.

NOV Date	**Method**
03/14/2003	WRITTEN

Others
ASSOCIATED TO A NOTICE OF VIOLATION

Track No: 20358 **Compliance Due Date: 07/13/2003**
Violation Start Date: Unknown

30 TAC Chapter 335.6(c)

Alleged Violation:
Investigation: 26845 Comment Date: 03/13/2003

30 Texas Administrative Code (TAC) 335.6 (c) - Notification requirements (Category C3)

EmChem needs to update its NOR. A review of EmChem's NOR indicated that WS#00054032 is an inactive WS. However, the WS is listed as being currently managed in one of the facility's waste storage tanks, WMU #004.

Investigation: 763382 Comment Date: 07/23/2009

Record review completed on 7/20/2009.

Investigation: 799051 Comment Date: 05/06/2010

Failure to update the notice of registration in a timely manner.

Recommended Corrective Action: EmChem needs to update its NOR.

Track No: 20359 **Compliance Due Date: 07/13/2003**
Violation Start Date: Unknown

30 TAC Chapter 335.4(1)

Alleged Violation:

Investigation: 26845 Comment Date: 03/14/2003

30 TAC 335.4 and 30 TAC 26.121 - Unauthorized Discharge (Category B10)

Analytical results of the soil samples indicated concentrations of Barium, Chromium, Lead and Mercury above laboratory reporting limits. Two of the soil samples have Lead and Mercury concentrations that exceeded the Texas-Specific Background concentrations for Lead (15.0 mg/kg) and Mercury (0.10 mg/kg). Analytical results in some of the groundwater samples indicated that Barium, Chromium and Mercury concentration above laboratory reporting levels. EmChem should conduct an environmental risk and health hazard assessment of the site in accordance with the provisions of 30 Texas Administrative Code 350, Texas Risk Reduction Program.

Investigation: 763382 Comment Date: 07/23/2009

Record review completed on 7/20/2009.

Investigation: 799051 Comment Date: 06/07/2010

Unauthorized discharges prohibited

Recommended Corrective Action: EmChem should conduct an environmental risk and health hazard assessment of the site in accordance with the provision of 30 TAC 350, Texas Risk Reduction Program.

Signed _____ **Date** _____
Environmental Investigator

Signed _____ **Date** _____
Supervisor

Attachments: (in order of final report submittal)

___Enforcement Action Request (EAR)

___Letter to Facility (specify type) : _____

Investigation Report

___Sample Analysis Results

___Manifests

___NOR

___Maps, Plans, Sketches

___Photographs

___Correspondence from the facility

___Other (specify) :

_____

_____